WHAT IS CLAIMED IS:

1. Fibrin comprising an elongated structure of a biopolymer having at least a portion stretched in at least one stretching direction.

2. Fibrin of claim 1, in which the structure is made of a material selected from the group consisting of fibrin, fibrinogen, chondroitin-4 sulfate, dermatan sulfate, keratan sulfate, hyaluronic acid, chitosan, chitin, alginate, laminin, elastin, fibronectin, collagen, organic polymer, peptide, derivatives thereof, and mixtures thereof.

3. Fibrin of claim 1, in which the stretched portion of the structure is porous.

4. Fibrin of claim 1, characterized in that the material of the stretched portion of the structure has at least two densities which are different from each other.

5. Fibrin of claim 4, in which the first density is at least 1.5 times, advantageously at least 5 times the second density.

6. Fibrin of claim 4, in which the first density is at least 2 times the second density.

7. Fibrin of claim 1, in which the elongated structure has a shape selected from the group consisting of thread, tube, hollow profile, film, fleece, sponge and membrane.

8. Fibrin of claim 1, in which the stretched portion has a shape selected from the group consisting of thread and tube, said stretched portion having an outer diameter of less than 10 mm, advantageously of less than 3 mm, preferably comprised between 100 µm and 2500 µm.

9. Fibrin of claim 1, in which the stretched portion has a shape of a tube with a central channel substantially parallel to the stretching direction, said central channel having a cross-section perpendicular to the stretched direction with a diameter of less than 15 mm, advantageously of less than 10 mm, preferably of less than 5 mm, most preferably comprised between 100 µm and 2500 µm.

10. Fibrin of claim 9, in which said tube has a wall thickness comprised between 0.1 mm and 5 mm, advantageously between 0.25 mm and 2.5 mm, preferably between 0.5 and 2 mm.

11. Fibrin of claim 1, in which the amount of fibrin in the resultant product is more than 50% of the components of the starting material.

12. Fibrin of claim 1, in which the elongated structure contains at least partly cross-linked fibrin.

13. Process for the preparation of a fibrin of claim 1, comprising the steps of

providing a first component of a fibrinogen-containing material;

providing a second component of a substance having a capability to convert fibrinogen into fibrin;

optionally providing a structure of a biopolymer having a stretched portion in at least one stretching direction in the first or second component; and

forming a fibrin-containing material by mixing the first component with the second component, optionally one of the components already containing the structure of a biopolymer, so that a fibrin comprising an elongated structure of a biopolymer having at least a portion stretched in at least one stretching direction is obtained.

14. Process according to claim 13 wherein the biopolymer is selected from fibrin, fibrinogen, chondroitin-4 sulfate, dermatan sulfate, keratan sulfate, hyaluronic acid, chitosan, chitin, alginate, laminin, elastin, fibronectin, collagen, organic polymer, peptide, derivatives thereof, and mixtures thereof.

15. Process according to claim 13 wherein the stretching is sufficient to elongate the length of the fibrin-comprising material of at least 5%, advantageously at least 10%, preferably at least 25%.

16. Process according to claim 13, which further comprises a drying step.

17. Process according to claim 13, wherein at least part of the fibrin-comprising material is stretched by mechanical or physical treatment.

18. Process according to claim 17, wherein the mechanical treatment is one of a compression or an extrusion and the physical treatment is one of an energy treatment or freeze-drying.

19. Process according to claim 13, in which the fibrin-comprising material is prepared in a mould or in dies, said material being thereafter stretched by a mechanical or physical treatment in said mould or dies.

20. Process according to claim 13, in which the fibrin-comprising material is at least partly stretched in a solution containing a cross-linking agent.

21. Process according to claim 13, in which the fibrin-comprising material is mechanically or physically treated in dies or in a mould so as to obtain an article having a shape selected from the group consisting of thread, tube, hollow profile, film, fleece, sponge and membrane.

22. Process according to claim 13, in which the fibrin-comprising material contains free water, and in which at least part of said free water is removed before the mechanical or physical treatment is carried out.

23. Process according to claim 13, in which the fibrinogen-containing material contains at least a further compound selected from the group consisting of fibrin, chondroitin-4 sulfate, dermatan sulfate, keratan sulfate, hyaluronic acid, chitosan, chitin, alginate, laminin, elastin, fibronectin, collagen, organic polymer, peptide, derivatives thereof, and mixtures thereof.

24. Process according to claim 13, in which the fibrin-comprising material is prepared from a fibrinogen-containing material as the first component and a solution containing less than 10 IU/ml thrombin as the second component.

25. Process according to claim 13, in which the fibrin-comprising material is prepared from a fibrinogen-containing material as the first component and a solution containing less than 1 IU/ml thrombin as the second component.

26. Process according to claim 13, in which the fibrin-comprising material is prepared from solution having a fibrinogen content of at least 3 mg/ml, advantageously at least 5 mg/ml, preferably at least 10 mg/ml.

27. Process according to claim 13, in which the fibrin-comprising material is prepared from a fibrinogen-containing solution containing a calcium complexing agent.

28. Process according to claim 13, in which the material from which the structure is made further contains at least an additive selected from the group consisting of protein, genetic material, anticoagulant, inorganic compound, growth factor, cells, anti-inflammatory compound, compound reducing graft rejection, cell growth inhibitor, antibiotic, antiseptic, analgesic, antineoplastic, chemotherapeutic, polypeptide, protease inhibitor, vitamin, cytokine, cytotoxin, interferon, hormone, antibody, antimicrobial agent, agent for improving the biocompatibility, derivatives thereof, and mixtures thereof.

29. Process according to claim 13, in which the fibrin-comprising material is submitted to lyophilization, preferably after stretching.

30. Article made at least partly from a fibrinogen comprising an elongated structure selected from the group consisting of fibrin-

comprising thread, tube, hollow profile, film, fleece, sponge and membrane or comprising such a structure.

31. Thread, tube, hollow profile, film, fleece, sponge or membrane obtainable by a process according to claim 13.

32. Thread, tube, hollow profile, film, fleece, sponge or membrane of claim 31 in which the stretched portion is stretched in at least two perpendicular directions.

33. Thread, tube, hollow profile, film, fleece, sponge or membrane of claim 31, which is rolled around an axis perpendicular to a stretching direction.

34. A process for the manufacture of a shaped article made at least partly of a fibrin of claim 1, in which an aqueous fibrinogen-containing solution as the first component and thrombin in an inactive form as the second component is provided, the amount of water present in the solution being advantageously such that after activating the thrombin and polymerization of the fibrinogen-containing material into a gel, substantially no water can be removed when submitting the gel to a centrifugation of 1,000 rounds per minute.

35. The process of claim 34, in which the thrombin present in the solution is at least partly activated when submitting the solution to a mechanical or physical treatment, advantageously in a mould or in dies.

36. A process for making a shaped article made at least partly of a fibrin of claim 1, comprising the steps of a mixing substances containing

particles selected from the group consisting of fibrinogen, inactive thrombin, derivatives thereof and mixtures thereof subject in the mixture to a mechanical or physical treatment, advantageously in a mould or in dies, in which the mechanical or physical treated particles are wetted or moistened, and in which the thrombin is at least partly activated and the shaped article is obtained.

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